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Clinical and epidemiologic characterization of patients confirmed with COVID-19 in an area of health

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ABSTRACT

Introduction: the speedy expansion of the illness and the exponential increase of cases confirmed with COVID-19, forced to the World Organization of the Health, declared as pandemic. Objective: to characterize clinic-epidemic of the patients confirmed with the COVID-19 in a health area. Method: it was carried out an observational, descriptive and traverse study, in patients confirmed with COVID-19, of all doctor's office belonging to Policlinic Santa Cruz, from January 2020 to April 2021. 99 patients constituted universe; all patients were studied. The variables were age, sex, infection source, clinical manifestations, associated pathologies and evolution. It was used the percentage and the absolute frequency; as well as the arithmetic stocking and standard deviation for quantitative variables. Results: it prevailed the ages of 41 and 60 years (33.3 %) and feminine sex (56.6 %), with a stocking of 43.2 + 21.1 years; it was required the infection source in 68.7 %, where the 88.9 % was autochthonous transmission, the rhinorrhea prevailed as clinical manifestation (42.4 %) and cough (35.4 %), being identified the hypertension was the main associated disease. In 12.1 % of the patients and it was obtained that 98 % responded favorably to the treatment. Conclusions: Middle age, female and hypertensive patients were more prevail to get sick of COVID-19 with the autochthonous transmission. They were presented with rhinorrhea and cough and responded favorably to the treatment.

Keywords: Coronavirus; COVID-19; Epidemiology; Pandemic; SARS-CoV-2.

The 21st century has been characterized since its beginnings by a health problem that has affected the world, and Cuba has not been able to leak from this situation, fluctuating from an increase in microbial resistance, increasing in oncological diseases until the appearance of new emerging and re-emerging infectious diseases, such as the appearance of COVID-19 at the end of last year[1].

In December 2019, the first cases were diagnosed in the city of Wuhan, China, and the presence of a new coronavirus was demonstrated, which in January 2020 was named Severe Acute Respiratory Syndrome 2 (SARS-CoV-2) due to its similarity to SARS-CoV, and in February the World Health Organization (WHO) coined the term the novel coronavirus disease 2019 (COVID-19)[2,3].

Due to the exponential increase of confirmed cases related to new SARS-CoV-2 coronavirus, on March 11, 2020, WHO authorities, based on the impact that the virus could have in underdeveloped countries with less health infrastructures, declared this health emergency a pandemic[4].

Up until May 6, 2021, 236 affected countries have been notified, with a cumulative number of 155 010 855 cases worldwide and 3 241 944 deaths[5].

In Latin America, the first case of COVID-19 was detected in Brazil on February 26, 2020, in a philanthropic hospital in the city of São Paulo[6]; since then, it has been spreading throughout the region, with Argentina being the first country to report a death from this disease. In South America, the curve of infected and dead people continues to grow[7]. The biggest promoters of the number of cases are the United States and Brazil, with 63 106 689 cases and 1 541 224 deaths reported as of May 06, 2021[8].

On March 10, 2020, four tourists from the Italian region of Lombardy were identified in Cuba in the province of Sancti Spiritus with respiratory symptoms, positive for the new SARS-CoV-2 coronavirus. The number of people infected by the new coronavirus

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continued to increase. According to the report on the website of the Ministry of Public Health (MINSAP), at the close of May 06, 2021, a total of 112 714 people were reported positive for SARS-CoV-2 in Cuba, and the number of deaths amounted to 701 people with an incidence of 0.6 %, which placed Cuba in 20th place among the most affected countries in the region [3].

In Artemisa province, the first positive case was reported on March 20, 2020, a 52-year-old citizen of the People's Republic of China, a worker in the Mariel Special Development Zone[9]. Since that date, the number of infected persons in Artemisa has gradually increased in relation to the number of confirmatory tests performed[3].

The route of human-to-human transmission of COVID-19 is considered similar to described for other coronaviruses, through the secretions of infected persons, mainly by direct contact with respiratory droplets of more than 5 microns (capable of being transmitted at distances of up to 2 meters) and hands or fomites contaminated with these secretions followed by contact with the mucosa of the mouth, nose or eyes[10].

The most frequent complications are pneumonia and multiorgan failure, sometimes leading to death. Other possible complications that have been described are adult respiratory distress syndrome, renal failure, acute lung damage, septic shock and ventilator-associated pneumonia[1,11].

Based on the above considerations, the increase of cases in this health area, the scarce studies on the subject and the theoretical and methodological value of the present study, it was decided to carry out the present research with the objective of clinically and epidemiologically characterizing the patients confirmed with COVID-19 belonging to the health area of the "Santa Cruz" Polyclinic, in the period from January 2020 to April 2021, San Cristóbal, Artemisa.

METHOD

Type of study: an observational, descriptive and cross-sectional study was approved in positive patients confirmed by reverse transcriptase polymerase chain reaction (RT-PCR) to SARS-CoV-2, belonging to all medical offices of the health area of the Polyclinic "Santa Cruz", San Cristobal municipality, Artemisa province, during the period from March 2020 to April 2021.

Universe and sample: : the universe was consisted of 99 patients and it worked with all of them. All patients diagnosed as positive by RT-PCR for COVID-19 disease were included. The exclusion criterion was given by the patients from whom it was not possible to collect all the variables necessary for the research, due to bias in the epidemiological survey.

Variables and data collection: data were collected from the epidemiological surveys of patients and statistical records. The following variables were extracted age, sex, source of infection, symptoms at the time of diagnosis, associated diseases and evolution.

Statistical processing: for the analysis of the variables, a database was created in the Statiscal Package for the Social Sciences (SPSS), version 21.0. Descriptive statistics were used through absolute and relative percentage frequencies, as well as the arithmetic mean (X) and standard deviation (SD) for quantitative variables.

Ethical standards: taking into account that this research did not require the direct participation of the patients, it was not necessary to request prior informed consent. The results were used only for research purposes and the requirement to keep confidentiality as appropriate was complied with, and the results found were disclosed through the corresponding channels. The basic principles set forth in the II Declaration of Helsinki were complied with. The approval of the institution's Scientific Council and Medical Ethics Committee was requested.

RESULTS

Patients were predominantly between 41 and 60 years of age (33.3 %); with a mean of 43.2 ± 21.1 years; and female (56.6 %). (Table 1).

Table 1. Distribution of patients with COVID-19 according to age and sex. Santa Cruz" Polyclinic, March 2020 to April 2021

Age group* (years)	Female gender		Male gender		Total	
	Nº	%	Nº	%	Nº	%
1-20	6	6,1	3	3	9	9,1
21-40	5	5,1	1	1	6	6,1
41-60	17	17,2	16	16,2	33	33,3
60-80	14	14,1	15	15,2	29	29,3
≥81	14	14,1	8	8,1	22	22,2
Total	56	56,6	43	43,4	99	100

Source: epidemiological surveys.

The source of infection was determined in 68 patients (68.7 %), 88.9 %, which were autochthonous transmission.

The most frequent clinical manifestations were rhinorrhea (42.4 %) and cough (35.4 %). 38.4 % of patients were asymptomatic at the time of diagnosis. (Table 2).

Table 2. Distribution of patients with COVID-19 according to symptomatology at the time of diagnosis

Symptomatology N=99	No.	%
Rhinorrhea	42	42,4
Cough	35	35,4
Nasal congestion	25	25,3
General malaise	23	23,2
Headache	22	22,2
Fever	20	20,2
Loss of smell and/or taste	18	18,2
Expectoration	13	13,1
Sore throat	13	13,1
Diarrhea	4	4
Asymptomatic	38	38,4

High blood pressure (12.1 %) was the main associated disease. 98 % of patients responded favorably to medical treatment.

DISCUSSION

In that investigation, middle-aged and female patients were predominated. In the research carried out by Guzmán et al[12] it is specified that the male sex predominated at the beginning of the pandemic and then the proportion changed in favor of females. However, it is suggested that the scarcity of information by gender limits theorizing on the probability of association between sex and susceptibility to the virus [13].

A study by Aúcar et al[5] showed that the most affected age group was between 40 and 59 years of age with 37.3 % of the total number of cases, with a mean age of 43.1 years, which coincides with the results of the present study. Likewise, in Brazil, Porfirio da Silva et al[14] determined the presence of a mean age between 40 and 56 years in their study; range in which the mean age that resulted in the present investigation is included.

The research conducted by Cuello Carballo et al[15] corresponds to the present study, showing that the age group between 40 and 59 years showed the highest incidence rate of 8.2 per 10 000 inhabitants.

This concordance is due to the fact that middle-aged patients constitute an important group in society, where the greatest labor force is registered, hence the social repercussion of their affectation; at the same time, they were the most active members of the family, since they had to leave the confinement to look for the necessary resources for subsistence, which exposed them to contracting the virus.

In the contemporaneous investigation, the source of infection was determined in most of the patients, where most of them were infected by autochthonous transmission of the virus.

The present results coincide with the study carried out by Ferrer et al[4] where they exposed that 79.7 % of the patients with COVID-19 presented autochthonous transmission as source of infection and also explained that the high incidence could be due to the geographical situation of the Florida municipality; which agrees with this research, since the characteristics of this Popular Council make it a place of great access since it is located in the course of the Central Highway, which makes it vulnerable to the transit of people from other municipalities; besides, it constitutes an access route to other adjacent Popular Councils.

The most frequent clinical manifestations were rhinorrhea and cough, with a high number of asymptomatic patients at the time of diagnosis. These results coincide with the studies conducted by Llaro et al[16] where cough is one of the most frequent symptoms.

Also, the research by Zhou et al[17] reported that one of the most frequent symptoms on hospital admission was cough. Also for Chen et al[18] cough was one of the predominant manifestations. Pérez et al[1], Guzmán et al[12] and Acosta et al19 coincide in their findings, pointing out that symptoms and signs such as cough and rhinorrhea prevail, coinciding with those obtained in the present study.

The presence of a considerable number of asymptomatic patients was also highlighted, which evidences the often silent nature of the presence of the virus; that is why, due to the different ways in which the disease presents itself, it is agreed that the diagnosis cannot be only clinical, hence the importance of classifying the patient according to the epidemiological history.

Arterial hypertension was presented as the most predominant personal pathological history in the patients studied. The diseases associated with the disease (arterial hypertension, diabetes mellitus, chronic obstructive pulmonary disease, bronchial asthma, and ischemic heart disease) are of great interest because they allow us to predict whether the patient could develop a severe form of the disease [15].

In a study by Cuello et al[15], arterial hypertension was present in 11.54 % of patients and 83.33% of hypertensive patients developed acute inflammatory pneumopathy.

While Cobas et al[20] state in an article that in 92.9 % of the cases there were associated diseases, with arterial hypertension being the most frequent; this coincides with the results of the present study. This similarity of results is mainly due to the high prevalence of this disease in the population.

Most of the patients had a favorable clinical evolution. Coinciding with the results of the study, the research carried out by Cuello et al[15] where 96.2 % of the patients had a favorable clinical evolution in response to the treatment applied, with epidemiological discharge by negative RT-PCR at 28 days.

This was achieved thanks to the establishment in Cuba of the National Protocol of MINSAP[21], which includes health promotion and prevention actions from primary care for the fulfillment of the hygienic-sanitary measures oriented by the WHO, as well as the use of a series of Cuban and foreign therapies that guarantee the prompt recovery of the sick, thus reducing the risk of transmissibility.

It is everyone's duty to strictly comply with these measures, as this is the only way to face the ravages caused by the virus. Among the limitations of the study was the small sample studied, so it is recommended to carry out studies with similar methodology in the different provinces of the country.

CONCLUSIONS

Middle-aged patients, females and hypertensive patients were more prone to get sick by COVID-19 with autochthonous source of infection. They presented with rhinorrhea and cough mainly. The mild clinical picture showed adequate response to medical treatment in all cases.

AUTHORSHIP

APC: conceptualization, formal analysis, research, methodology, project management, supervision, visualization, validation and verification, writing, reviewing and editing.
MCG: data curation, formal analysis, research, writing, review and editing.
LRM: conceptualization, project management, formal analysis, research, methodology, validation, verification, writing and review.
LAS, NCF and CFB: project management, formal analysis, research, writing and review.

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Caracterización clínica y epidemiológica de pacientes confirmados con COVID-19 en un área de salud

RESUMEN

Introducción: la rápida expansión de la enfermedad y el incremento exponencial de casos confirmados con COVID-19, obligó a la Organización Mundial de la Salud declararla como pandemia. Objetivo: caracterizar clínica y epidemiológicamente los pacientes confirmados con COVID-19 en un área de salud. Método: estudio observacional, descriptivo y transversal, en pacientes confirmados con COVID-19, de todos los consultorios pertenecientes al Policlínico Santa Cruz, de enero de 2020 a abril de 2021. El universo estuvo constituido por 99 pacientes, todos fueron estudiados. Las variables fueron: edad, sexo, fuente de infección, manifestaciones clínicas, enfermedades asociadas y evolución. Se procesaron mediante estadígrafos descriptivos. Resultados: predominaron los pacientes entre 41 y 60 años (33,3 %) y sexo femenino (56,6 %), con una media de 43,2+21,1 años; se precisó la fuente de infección en el 68,7 %. El 88,9 % fue transmisión autóctona y predominó la rinorrea (42,4 %) y la tos (35,4 %). La hipertensión arterial (12,1 %) fue la principal enfermedad asociada. Se obtuvo que el 98 % respondió favorablemente al tratamiento. Conclusiones: los pacientes de edad media, las féminas y pacientes hipertensos fueron más propensas a

enfermar por COVID-19 con fuente de infección autóctona. Estos se presentaron con rinorrea y tos fundamentalmente. El cuadro clínico poco aparatoso evidenció adecuada respuesta al tratamiento médico en todos los casos.

Palabras clave: Coronavirus; COVID-19; Epidemiología; Pandemia; SARS-CoV-2.